



[Billing Code 4140-01-P]

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Government-Owned Inventions; Availability for Licensing

AGENCY: National Institutes of Health, HHS

ACTION: Notice

SUMMARY: The inventions listed below are owned by an agency of the U.S.

Government and are available for licensing in the U.S. in accordance with 35 U.S.C. 209 and 37 CFR Part 404 to achieve expeditious commercialization of results of federally-funded research and development. Foreign patent applications are filed on selected inventions to extend market coverage for companies and may also be available for licensing.

FOR FURTHER INFORMATION: Licensing information and copies of the U.S.

patent applications listed below may be obtained by writing to the indicated licensing contact at the Office of Technology Transfer, National Institutes of Health, 6011

Executive Boulevard, Suite 325, Rockville, Maryland 20852-3804; telephone: 301-496-

7057; fax: 301-402-0220. A signed Confidential Disclosure Agreement will be required to receive copies of the patent applications.

SUPPLEMENTARY INFORMATION: Technology descriptions follow.

Novel Furoquinolinediones as Inhibitors of TDP2 and Their Potential Use to Treat Cancer

Description of Technology: The invention relates to novel Furoquinolinediones derivatives and their ability to inhibit the enzyme tyrosyl-DNA phosphodiesterase 2 (TDP2), and therefore to serve as anti-cancer agents. Furthermore, these compounds can be used in combination with topoisomerase II (Top2) inhibitors, such as etoposide or doxorubicin, to more effectively kill cancer cells in a synergistic fashion.

Pharmaceutical compositions containing these novel Furoquinolinediones and methods of treatment comprising administering of such compositions are disclosed in the invention.

Potential Commercial Applications: Furoquinolinediones derivatives can potentially be utilized for cancer treatment either as stand alone or in combination with other drugs such as Top2 inhibitors.

Competitive Advantages: Combination therapies based on the association of a TDP2 and a Top2 inhibitor because of their synergistic effect should allow the decrease of the effective dosage. Their therapeutic benefit should be observed at non-toxic concentrations for normal cells as it has already been demonstrated for PARP inhibitors in BRCA-deficient tumors.

Development Stage: In vitro data available

Inventors: Christophe R. Marchand, Likun An, Yves G. Pommier (all of NCI)

Intellectual Property: HHS Reference No. E-275-2014/0 - US Provisional

Application No. 62/100,968 filed January 8, 2015

Licensing Contact: Kevin Chang, Ph.D.; 301-435-5018; changke@mail.nih.gov

Transgenic Mouse Model of Human Open Angle Glaucoma

Description of Technology: Glaucoma is a group of chronic neurodegenerative disorders, which is characterized by progressive loss of retinal ganglion cells (RGC) and results in irreversible damage to optic nerve and thereby loss of vision. Primary open angle glaucoma (POAG) is the most common form of glaucoma; mutations in *MYOC* gene are the most common genetically defined cause of POAG. As such, *MYOC* transgenic mouse models are very useful to study *MYOC*-associated glaucoma and to develop therapies to treat these diseases.

The NIH inventors generated a new *MYOC* mouse model carrying a mutant human *MYOC* (*Y437H*) gene. The *Y437H* mutation is associated with a severe form of glaucoma among the identified *MYOC* mutations.

Potential Commercial Applications:

- Research tools
- Drug development for glaucoma

Competitive Advantages: The new transgenic mouse model carries a mutation associated with a severe form of glaucoma in humans.

Development Stage: Prototype

Inventors: Stanislav Tomarev (NEI), Yu Zhou (former NEI), Oleg Grinchuk (former NEI)

Publications:

1. Zhou Y, et al. Transgenic mice expressing the Tyr437His mutant of human myocilin protein develop glaucoma. Invest Ophthalmol Vis Sci. 2008 May;49(5):1932-9. [PMID 18436825]

2. Joe MK, Tomarev SI. Expression of myocilin mutants sensitizes cells to oxidative stress-induced apoptosis: implication for glaucoma pathogenesis. Am J Pathol. 2010 Jun;176(6):2880-90. [PMID 20382707]

3. Chou TH, et al. Transgenic mice expressing mutated Tyr437His human myocilin develop progressive loss of retinal ganglion cell electrical responsiveness and axonopathy with normal IOP. Invest Ophthalmol Vis Sci. 2014 Aug 14;55(9):5602-9. [PMID 25125600]

Intellectual Property: HHS Reference No. E-091-2015/0 - Research Tool.
Patent protection is not being pursued for this technology.

Licensing Contact: Tedd Fenn; 424-297-0336; tedd.fenn@nih.gov

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